From: Russ Herrell

To: Doug Young
Date: February 10, 2020

Subject: Request for Info - File # 0765-EX-CN-2019

Message:

1. You have marked an exhibit as confidential. You must submit an item-by-item justification for the confidentiality request to answer the nine subsections of Part 0.459(b) of the FCC's rules. All non-confidential material must be separated from the confidential material and must be viewable by the public, as must the confidentiality justification.

Request that the initial marking of confidential for this license application be removed. Doug Young confirmed via email with Russ Herrell on 2/3/2020 that the confidentiality marking would be removed.

2. Submit a narrative statement describing in detail the program of research and experimentation proposed, the specific objectives sought to be accomplished; and how the program of experimentation has a reasonable promise of contribution to the development, extension, or expansion, or use of the radio art, or is along lines not already investigated. Also, describe the project associated with the government contract.

GA-ASI has submitted this spectrum use request in order to use the command non-payload communication radio prototype in conjunction with its contractual obligation with NASA for the System Integration and Operationalization (SIO) program. The program is the first of its kind in that it is designed to demonstrate the feasibility of integrating an unmanned aerial system (UAS), which by nature the FAA considers an experimental aircraft system, into the national airspace (NAS).

The SIO program will advance the technology development and research which has been performed on the integration of an experimental detect and avoid (DAA) system and command non-payload communication (CNPC) command and control (C2) radio prototype, as well as facilitate progress toward generating artifacts for aircraft type certification. The CNPC radio will make use of C-band frequency ranges, which have been previously coordinated with the FAA. The use of ADS-B, air to air radar, traffic collision avoidance system (TCAS), and a synthetic aperture radar (SAR) have also been coordinated with the FAA.

SIO as a program of experimentation has more than a reasonable promise of contribution to the development and expansion of commercial applications of UAS in the NAS by demonstrating the safe and effective integration of the air-to-air radar, TCAS, and ADS-B for detect and avoid and a CNPC radio prototype for command and control to successfully conduct aerial inspection and surveillance of critical infrastructure owned by commercial and civil entities with whom GA-ASI has previously coordinated. This type of commercial mission has never been done with a UAS anywhere in the United States – it is a first of its kind and will serve as a proof of concept for future, similar commercial UAS missions.

The specific objectives are to integrate DAA and C2 UAS technologies required for a commercial mission, conduct a flight demonstration in the NAS, and make progress toward type certification and operational approval required for routine commercial UAS operations. This work will culminate in a UAS flight demonstration in the National Airspace System with integrated detect and avoid (DAA) and command and control (C2) systems, progress toward UAS type certification, and publicly available documentation of lessons learned from the type certification efforts to benefit the UAS community.

3. Submit the center coordinates of Grey Butte Airfield and the radius of operations around those coordinates where the testing will occur.

Gray Butte airfield coordinates: N 34 deg 34 min 12 sec, W 117 deg 40 min 48 sec. Requesting a radius

of 25nm around this location to demonstrate use of the CNPC radio prototype.

4. Coordinate the use of 5030-5091 MHz with the FAA through their web portal at https://webfcr.faa.gov/Account/Login.aspx?firstlogin=no. Report back to this office any NG T numbers that are assigned.

Coordination with FAA spectrum office ongoing. All required information that corresponds with this license application has been provided to the FAA via the website above. NG T numbers to date: T200081, T200082, T200096, T200097, T200092, T200093. PLEASE NOTE - the longitudes in these NG T numbers have been incorrectly approved as 114 40 48 instead of 114 40 48 as listed above in question #3. We have requested that the FAA spectrum office correct this.

5. What is the maximum altitude that the aircraft will transmit from?
15,000 feet MSL